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Master's Thesis

Optimizing SaaS development output to serve all customers

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Abstract

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Today's software delivery models have evolved tremendously from the time when applications were installed on-site and operated locally. Software as a service, or SaaS has become one of the most common delivery models which software vendors offer and companies acquire. There is no need for rigorous and time-consuming upkeeping process that was earlier usually left on IT department's responsibility.

While SaaS as a development and delivery model offers rapid and flexible software development, it also aims to standardize the product or a service in question, and not much tailoring and variations between implementations exist. This can be problematic, especially in sectors where processes vary from company to company. The main motivation for this research was to find answers on how to identify these varying needs different companies have, and then again, how should new functionalities be offered to existing customers.

Focus on practical research target group was HR sector and recruitment part of it to be specific. SaaS product in question was LAURA™ recruitment software, one of the leading recruitment tools in Finland. Five key heavy users were interviewed, and 73 HR professionals were inquired in a form of questionnaire on how they see the current system and process development situation. Participants were also asked about how and when they would like to be contacted in the means of new functionalities, and especially how they would like to present their development ideas and get informed about other's development requests.

Literary research focused on SaaS in general, and Lean principles (Voice of the Customer in particular).

Keywords
Software as a Service, SaaS, Customer relationships, Voice of the customer, Software development

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Abbreviations

AR	Action research
ASP	Application Service Provider
IS	Information Systems
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITSM	Information Technology Service Management
KPI	Key Performance Indicator
LAURA™	LAURA™ recruitment software
POC	Point of contact
ROI	Return on investment
SaaS	Software as a Service
SCM	Supply Chain Management
SMB	Small and medium-sized business
VOC	Voice-of-customer

1 Introduction

The aim of the project was to explore best practices to develop and deliver functionalities to existing customers in SaaS (Software-as-a-Service) market. SaaS as a sales and distribution model was introduced around fifteen years ago. Generally, SaaS applications are used through browser over the internet. SaaS applications are most commonly offered with monthly subscription fee. Predecessor for SaaS can be considered to be ASP (Application Service Provider). SaaS and ASP are sometimes used to mean same thing, and it is not easy to separate these two concepts (Järvi et. al. 2011, 10). "Software as a service means that the computer application being used by the customer is hosted remotely using the servers and infrastructure of the service provider. The service could include a single application or a suite of applications." (Blokdijk, G. 2008, 24)

Inspiration to this research arose from author's current position in his work (Uranus Oy), developing recruitment software (LAURA™), which follows most of SaaS delivery principles. This work focused on finding researched information about developing and delivering flexible functionality to a multi-tenant SaaS system. "Commonly, a software as a service (SaaS) application is hosted by a provider in the cloud, rented to multiple customers (called tenants) and accessed by the tenant's users over the Internet." (Shroeter, J., Mucha, P., Muth, M., Jugel, K. 2012, 1). Tenant is often used as a technical synonym for business term customer or client.

"It can be said that SaaS solutions (or SaaS applications) can be considered web-native applications because their technologies were made especially to adapt to browsers." (Blokdijk, G. 2008, 119). Business applications that are offered in current software market are increasingly transforming into web-native software, mostly offered with SaaS principles.

In this thesis, author attempted to find answers on how to identify the needs in the multi-tenant environment and how to further offer the useful functionalities that one tenant or some tenants have required (or simply indicated as useful). It might not be profitable to for vendor to implement certain functionality if there is only one paying

customer. To be able to offer the functionality for customer at a reasonable price, other interested customers might be needed for sharing the expenses that the implementation creates. This way all interested customers should receive the functionality affordably and software vendor at the same time widens the variety of functionalities.

Businesswise, main aim was to find ways to increase the post-acquisition revenues (for vendor) via designing and delivering the functionalities needed by customers effectively. Also, it should be every vendor's aim to have a high customer satisfaction rate. By ensuring that customers get what they want, also customer relationship should grow stronger and satisfaction rate could be retained. The pressure was put on two specific questions. Firstly, how to identify the needs and requirements different tenants might have? Secondly, which are the best ways to offer the functionalities to existing customers?

This work focused mainly on the business side of software delivery practices and ways to effectively practice post-acquisition development and sales. Technical aspect on how development should be carried out was not in major role in this work.

1.1 Brief history of software development

Software applications have been originally delivered physically and operated locally (On-premise). In principle, vendor's development units coded programs to meet the known needs, and then deliver them to customer either by sending them a copy and installation instructions, or going to customer premises to install the application. Development was mostly product-driven and implemented independently in vendor organization. This method however is slow, rigid, updating is arduous and it is IT-department that is responsible for the upkeep. Some legacy systems still operate this way.

1.1.1 Internet as enabler

As internet has evolved to its current state, software delivery and updates have become substantially more effortless. After the most arduous operational model, vendor's tech

specialist could establish a remote access and update systems without visiting the customer. After SaaS delivery model was introduced and software was in cloud, software development had the possibility to take a giant leap in the means of delivery times.

As technology and new delivery models have given the possibility to develop software more rapidly and feasibly, market demand at the same time is becoming more and more demanding. These phenomena together and simultaneously pose software vendors great challenges, both in the mean of size and opportunity. How to answer the various demands and still produce high quality, standard software? This thesis tried to find out some answers around the dilemma.

1.2 Background

This research was both theorethical and practical. Practicality was gained by studying customer input in the form of interview and questionnaire. Literature around SaaS, marketing and Lean were studied in order to find some researched information to support the assumptions.

The product in question is LAURA™ -recruitment software; an e-recruitment tool used by HR-professionals. LAURA™ includes functionalities all the way from recruitment planning to the end of employment. LAURA™ is a modular system, which has tools for recruitment plan, job creation and publishing, candidate selection process, communication, work contract, development discussion to name few. Modularity allows building the system so that customer has to pay only for those functionalities, that are needed in customer's organization.

LAURA™ is delivered Software as a Service, SaaS, and that is the reason why the research in question was carried out. It is however the case, that SaaS, in its traditional delivery model, offers standardized products and services to serve all customers in the same, well-considered way. While best practises usually lead into effective ways to work, recruitment and HR processes may vary a lot from customer to customer. This poses a challenge. Having best practice standard system might serve wide selection of

customers with procedures based on standards. It is however seen eminent in order to succeed in the market, that customer's wishes must be listened and fulfilled whenever they seem fit and logical. A hundred customers might have a thousand wishes, and this was central schema when forming the research problem for this work. LAURA™ development model follows multi-tenacity principles, in which core of the code is shared between customers, and rapid modifications to the core are possible. Different configuration techniques and other technical solutions are used to answer to different needs coming from customers. This way LAURA™ differs from traditional SaaS product, as it can be tailored to customer's needs quite flexibly.

Company delivering LAURA™ -recruitment software and the orderer of this research is Uranus Oy, a privately owned Finnish software house located in Pasila, Helsinki. The author works for Uranus Oy as Software Development Manager, and is coordinating the daily development process of LAURA™ together with roughly one hundred customers, a five-member software development team and sales organization.

Potential customers and customers using the software vary in their operations, maturity and size. Recruitment can happen for own purposes, for a client, or for rental workforce. Sector can be public or private, size can be SMB or large enterprises. There are different enterprise architectures, siloed organizations, standardized companies, local and global operators. All these variations generate great amount of different needs towards the recruitment software and recruitment process in general.

1.3 Research problem and research question

There is a lot of potential in the development and distribution process of a SaaS product and its new functionalities, especially in market where there are various types of customer organizations. A feature or a functionality needed by one customer might be needed or preferred by another one as well. The problem is that the other company might not recognize the need. Also, the vendor cannot always see the need if it is not presented to them by customer. Accordingly, research problem is as follows;

How to optimize SaaS enabled post acquisition development to successfully serve all customers?

This problem forms two research questions. How to identify customer's need for a functionality that has already been implemented for another customer by the vendor? This question can be extended so that it would cover the *intention to buy* as well.

How to identify customer's need for a functionality which might already have been implemented for, or negotiated with another customer?

There can multiple individuals from vendor's organization who interact with customers. If communication is not coordinated accordingly, some knowledge might not be transmitted within the vendor organization. In other words, same kind of functionalities can be talked and even provisionally planned. Worst case can be that customer is not even given the opportunity to give feedback and articulate their preferences. Answers on how better listen to customer, and especially to find recurring patterns in customer needs ought to be found during this research. One of the first steps was to investigate general customer satisfaction; that would give some direction on how customers relate to vendor as a process-developing and supporting partner.

Research question number two is presented as follows;

What are the best practice ways to introduce an implemented or a planned functionality to existing customers?

These fairly broad research questions could be divided into sub-questions, which could be presented more straightforwardly. How to identify customer's varying needs? How often and which way should customers be contacted when communicating about development? How to design and implement functionality so that it suits best for different customer needs? These questions need to be asked from customers in order to understand the right approach.

1.4 Motivation

The motivation for this research was and is both company level, and personal. To receive answers to research questions mentioned above can notably increase sales to existing customers. The sales process itself should intensify when there is a proper model that has been researched to be functional. But it is not only the commercial angle that is under investigation. Quality, spectrum of functionalities, and by that, the overall product competitiveness should improve by developing useful functionalities.

Customer satisfaction is one of the most important factors in SaaS business, as customers are eager to switch vendor if relationship is not beneficial and mutual trust does not exist. Sales support process itself should become more efficient; technical team should receive some concrete guidelines for sales support and also to so-called "passive sales". Passive sales in this context consists of events, where customer has a need or a problem, and specialists at vendor's side, together with customer, aim to find a resolution to. End result is usually a functionality that solves the problem or aids customer in some way. Customer then compensates the resolution financially.

If the research should produce brilliant and functional approaches in the long run, the outcome could be that the product in question would get international attention because of the excellent applicability and service process. "The challenge to develop more reliable and consistent SaaS software applications will be the driving force of [these] vendors in obtaining worldwide success and recognition." (Blokdijk, G. 2008, 97). By internalization, or at least domination of the domestic market, prominent growth in company could be expected. Author himself would benefit from having a structured instrument on approaching customers when new functionalities are suggested, planned and implemented. Technology team at Uranus would naturally benefit in the same way as the author. Sales team would benefit from having this instrument or guideline as well.

2 Methodology

2.1 Action research

The research method utilized and applicable to this project was Action research (AR). "Action research focuses on research in action, rather than research about action. The central idea is that action research uses a scientific approach to study the resolution of important social or organizational issues together with those who experience these issues directly. Action research works through a cyclical four-step process of consciously and deliberately (i) planning, (ii) taking action and (iii) evaluating the action, (iv) leading to further planning and so on." (McDermott, A., Coghlan, D., Keating, M. 2008)

Below in Figure 1 is an elaborative chart on AR looping process.

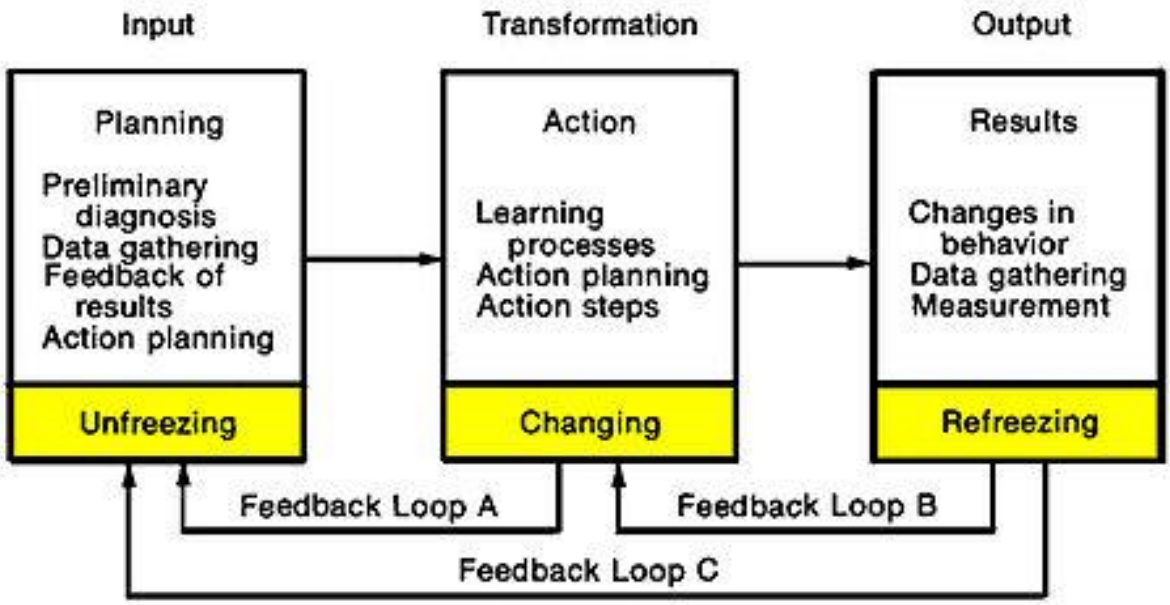

Figure 1: Action research process model (Wikipedia 2006)

According to Kurt Lewin, "the father of action research", the process of change involves three steps; Unfreezing, Changing, and Refreezing. Unfreezing step is taken when involving party identifies a problem and becomes aware of a need to change. Change step is the action part of the process. New ways to operate are investigated and experimented during the Change step. Refreezing step is taken into action when the state of the process is evaluated after changes are made.

Action research, Participatory Action Research to be exact, was suitable for this project, as author was participating in the research facilitating the process and transforming the known ways to work. Action Research was seen suitable also because the research topic is highly customer-centered, which is one of Action Research main characteristics.

2.2 Data gathering methods

This work is structured so, that it heavily leans on customer insights. In order to find out answers on how customers see ideal development process, interviews and questionnaire were used.

2.2.1 Interview

The initial phase involved customer; selected key customers were asked (in format of structured interview) about how they wish to be contacted when some new functionality is developed or is proposed to be developed (planning part of the AR). The customers were also asked about how they would like to share the development ideas between vendor's development team. The aim was to find out recurring patterns in customer input. The interview questions are in Appendix 1.

2.2.2 Questionnaire

After studying the interview answers, a more formal questionnaire was constructed. The questionnaire was formed so, that it had a strict part with multiple choice questions, but also room for some free input in form of open ended questions. It was crucial to figure out the right questions in order for them to be usable when planning action steps for guiding the work. Interview answers gave insight for building the questionnaire. Planning process for the questions focused on getting answers to aspects such as how often, on which proportion, by which way, and by whom should customer be contacted in the means of new features of software development. Questionnaire also had a section dedicated for getting information on the case where customer has

development ideas. Aim was to learn how customers would see a separate development idea tool inside the system.

2.3 Work flow

Five customers and their key heavy users were selected for the initial interviews (Appendix 1). Interviews were held in customer's premises in June and July 2013. Customers were asked about how they were currently expressing their development needs to Uranus. They were also asked about how they currently got information about new functionalities that have become available in the system. After those open questions, customers were asked how the same topics could and should be improved.

After analyzing the interview output, questionnaire (Appendix 2) was planned and executed. Questionnaire was carried through in January 2014. It was conducted with a web-based form, which was sent by email followed by an invitation to participate in this research.

There are customers with varying nature of activeness when it comes to developing processes and systems. This posed a challenge for the author in deciding which sample of the customers should be chosen for the final questionnaire. Initial idea was that only active customers would be invited to answer the questionnaire. This way results were thought to be perhaps more topical or current. Customers were to be selected based on number of contacts and actualized development projects or tasks during previous 12-15 months. Being so, the data analysis method was designed to be qualitative, not quantitative. It was projected, that if around 20 customers were selected, and 1-3 of their super users (or heavy users) were invited to fill out the questionnaire, around 40 answers would be received.

This selective sampling method differed from traditional Action Research, where, according to Richard Winter "the relevant persons, committees and authorities need to be consulted, and the principles guiding the work are accepted in advance by all." (Winter, R. 1996). After familiarizing with Winter's work, selection method was recon-

sidered. Re-planned idea was that every customer would have the opportunity to answer to the questionnaire. This way, traditional action research principles were followed, and all customers had the opportunity to give their opinion.

Total of 146 questionnaire invitation were sent. After two weeks, 73 answers were received. The response rate was 52%, which can be considered as satisfactory ratio.

Next task was to process the questionnaire data. After processing the data gathered from the customers, next actions were planned. This was done by analyzing the answers and forming an approach strategy to be tested with all customers for next coming functionality (action part of the AR). A single new functionality was being selected to be offered. When functionality offer was rolled out and waited for reactions for an applicable time (roughly estimated to be one month), results were analyzed by reflecting the number of contacts and actualized project before the rollout to present situation (results part of the AR).

The actual tool that was utilized for conducting the questionnaire was *Webropol*. Webropol was an ideal tool for a web-based questionnaire not only because of its good usability and availability at the moment of research, but also because of its sophisticated reporting functionalities as well.

While customer's opinions and preferences are majorly important, various literature around the topic were studied and mirrored against questionnaire results. Following chapters present the questionnaire results. In every context supporting or differing points from studied literature are brought forward.

3 Ingredients for successful development

As described in the introduction, the aim of this work was to find some direction for finding the best ways to design and deliver functionalities to existing SaaS software customers, and by that, increasing the post-acquisition sales and customer satisfaction in general.

3.1 Customer satisfaction

Customer satisfaction is undeniably one of the most important high level key performance indicators, KPIs.

When asked about general satisfaction and flow of development process with LAURA™, customers indicated being very satisfied. **Over 90 percent (67 out of 73) of the respondents stated that they were extremely pleased or pleased with current situation.** Figure 2 below is an extract from the questionnaire (as are all the following figures after this with same structure of having a scale from one to four); number one being least positive and four being most positive. *EOS* signifies no answer or no opinion.

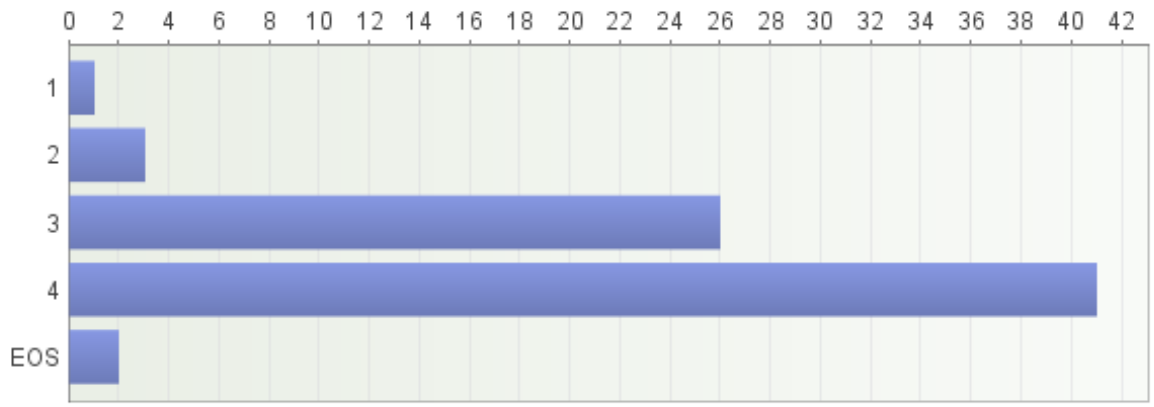

Figure 2 LAURA™ questionnaire, general satisfaction towards LAURA™ (Appendix 2, question 1)

Users were also asked about how satisfied they were to the specialist consultancy received from the vendor (Uranus). Answers were divided mostly between extremely satisfied (46) and satisfied (19), adding up to **89 percent being satisfied to the specialist consultancy received from vendor**. Figure 3 illustrates the division in satisfaction level.

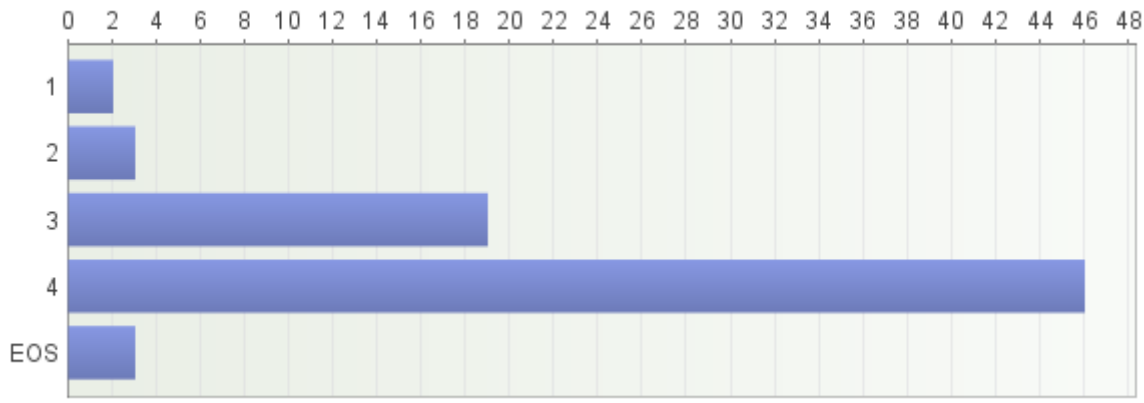

Figure 3 LAURA™ questionnaire, satisfaction towards vendor's specialist consultancy (Appendix 2, question 2)

The customer satisfaction rate is fairly high as can be seen from the questionnaire answers. According to Kotler (2013) "Most companies pay more attention to their market share than to their customers' satisfaction. This is a mistake. Market share is a backward-looking metric; customer satisfaction is a forward-looking metric. If customer satisfaction starts slipping, then market share erosion will soon follow." (Kotler, P. 2003, 41). Although customer oriented approach is the carrying principle in Uranus, customer satisfaction is not measured periodically. This should be taken into consideration and customer satisfaction should be measured regularly. As said, it is more important to look into future rather than to the past.

3.2 SaaS characteristics

According to Blokdijk (2008, 173), four basic characteristics for SaaS company exist:

- It should be multi-tenacity
- The services should be shared
- It should have a feedback mechanism
- It should be a pay-as-you-use only service

LAURA™ follows the first two principles listed above; it is a multi-tenacity system, and services are shared. The two latter ones are not following Blokdijk's four principles as there is no feedback mechanism and service is not following pay-as-you-use princi-

ple. It's however eminent, that there should be some kind of a feedback mechanism, other than traditional email or help desk telephone. For this, different feedback mechanisms should be examined and suitable 3rd party feedback / communication component should be taken into use. Some ready packages used in web services that could be integrated are for example ZenDesk and UserVoice.

Questionnaire results fortify the assumption that some feedback channel should exist. LAURA™ users were asked if they would prefer a separate tool for development requests, feedback, and ideas. 38 out of 73 respondents answered that it would be extremely useful to have such a tool. 22 out of 73 answered that the tool would be useful; this adds up to **82 percent of all participants considering a separate tool being useful.** Figure 4 states the division on how important the tool would be perceived.

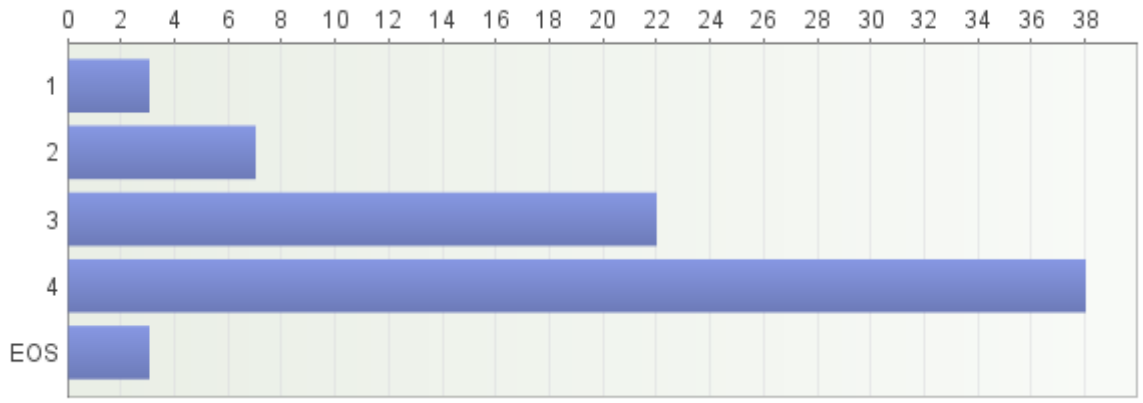

Figure 4 LAURA™ questionnaire, usefulness of development request tool (Appendix 2, question 13)

Also, it is an intentional direction that LAURA™ is not offered with pay-as-you-use principle. It is noted based on earlier customer interviews that companies do not wish to have hidden costs in the maintenance pricing. Pay-as-you-use enables this, as customer does not necessarily know how many users are using the software. In addition, if the software user amount is restricted to some number, it is not favorable for vendor that fewer users use the software. This can be rationalized by projecting that if more users are using the software currently in one company, the bigger the possibility there is for the same users to support and vote for same software to be acquired in next

company in the future. This has actually been noticed in Uranus with power users switching companies and acquiring LAURA™ in the new organization.

Satisfied customers tend to praise the software and its effortless usage to their colleagues as well. In simple SaaS applications, especially in the consumer business, this is called viral distribution. In viral distribution theme, recommendation flows from one user to another. (Järvi et. al. 2011, 10). Viral distribution is however present also in enterprise SaaS environment. This recommendation phenomenon has extremely powerful effect on new acquisition decisions.

3.3 Continuous development

SaaS delivery model and multi-tenacity allows rapid development, as mentioned earlier. "Since competition is stiff and with large companies including Microsoft and Oracle already developing SaaS software, it is indeed a challenge to make your product stand out above the rest. In addition, expect smaller revenue at first due to lower subscription fees. But then again, if your products and services fit the standards of many companies, there will be a brighter future ahead for your SaaS business." (Blokdijk, G. 2008, 61). This is legitimate point when getting various type of input from existing and also potential customers, and then designing a concept out of the idea. As said, the products and services (and modules, functionalities, configurations just to name few terms) should be designed so, that they will serve others tenants too. To enable functionalities with minimal effort among tenants is highly important, only through that can systems be competitive to meet the market demands.

"We consequently focus on the impact of IS flexibility on process efficiency measured by the overall cost to perform a given business process [Kauffman and Walden, 2001]. Our goal is to identify the mix of flexibility strategies that promises cost efficiency of a given business process, taking into consideration the three strategies of flexibility-to use, flexibility-to-change, and manual performance of process tasks outside of the IS." (Gebauerm, J., Schober, F. 2006, 11). IS is referred to Information Systems in the citation above. Although the excerpt discusses on planning to acquire a whole system, it

can be reflected to acquiring parts of a system as well. What this elaborates, is that thorough planning needs to be made on how to offer a new solution to customer. It is however crucial to continuously develop the system or the service to be offered, due to that there is a highly active market complicating the process of succeeding in the market. The term cost efficiency stands out more and more frequently these days. Therefore it is not enough to develop a competitive system, but to make it competitive regarding pricing as well.

3.4 Readiness for customization

SaaS is traditionally considered as a delivery method where systems are standard and there are no major customer-specific customizations from vendor side. It is however noted at Uranus, that quite often at least some customization is needed in order for the customer to be really satisfied. Customization can be enabled on the customer side as well, which increases the flexibility of the system and allows personalization. "An end user may customize the software to suit individual needs without touching the core codes of the program. Because of greater interaction between users, the customized development can be shared to other user thus giving impetus to further refinement of the application." (Blokdijk, G. 2008, 149). Some of the configuration and personalization might be arduous for vendor. Optimally, these areas should be identified, and, if possible, moved to customer's responsibility.

As mentioned earlier, most LAURA™ users would appreciate a separate development request tool inside the system. Also, requests from other customers would be good to be visible somewhere. The tool should have a section for browsing requests made by others as well. This could inspire to take advantage of solution proposals written by other customer's HR department. Figure 5 below shows that **85 percent (57 out of 67) would very much want to see other's development ideas.**

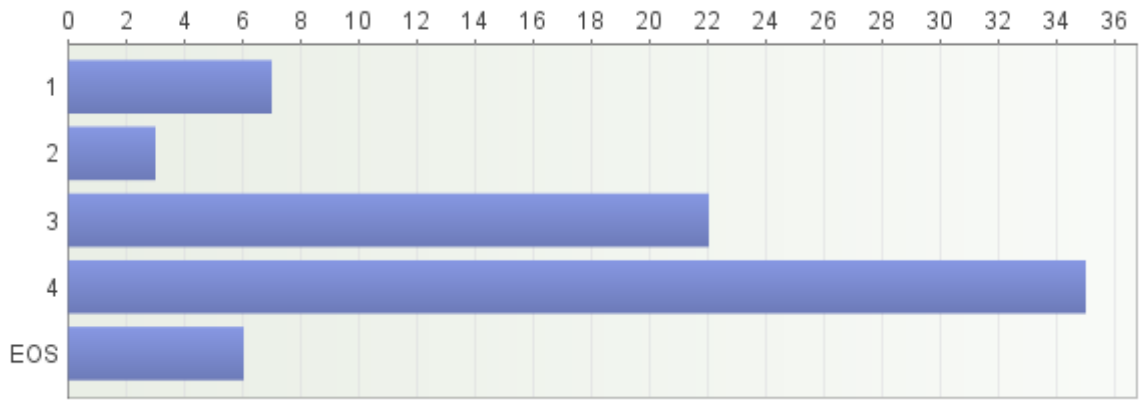

Figure 5 LAURA™ questionnaire, interest towards other's development ideas (Appendix 2, question 16)

Blokdijk also mentions that "This instant gratification of customer needs has made SaaS software more competitive versus the traditional on-site programs." (Blokdijk, G. 2008, 149). This fortifies the assumption that a separate development request tool should be implemented inside the system.

As pointed out before, vast majority of customers would appreciate separate tool for inserting a development idea or change request. Most customers (53 out of 73) however think that some communication with technical specialist at vendor side should be done before the request could be fulfilled orderly. Then again, only one respondent thought that the development tool wouldn't serve as a media for inserting requests. It can be seen from Figure 6 how customers see the tool independently fitting to transmit requests. Division in Figure 6 is numbered and legends are as follows:

1. Yes, textually defined request or change requirement would be clear
2. Yes, but it might require discussion with technical specialist
3. Not very convinced that requests can be described and transmitted properly textually
4. No, textual request would most probably be implemented differently than wished for

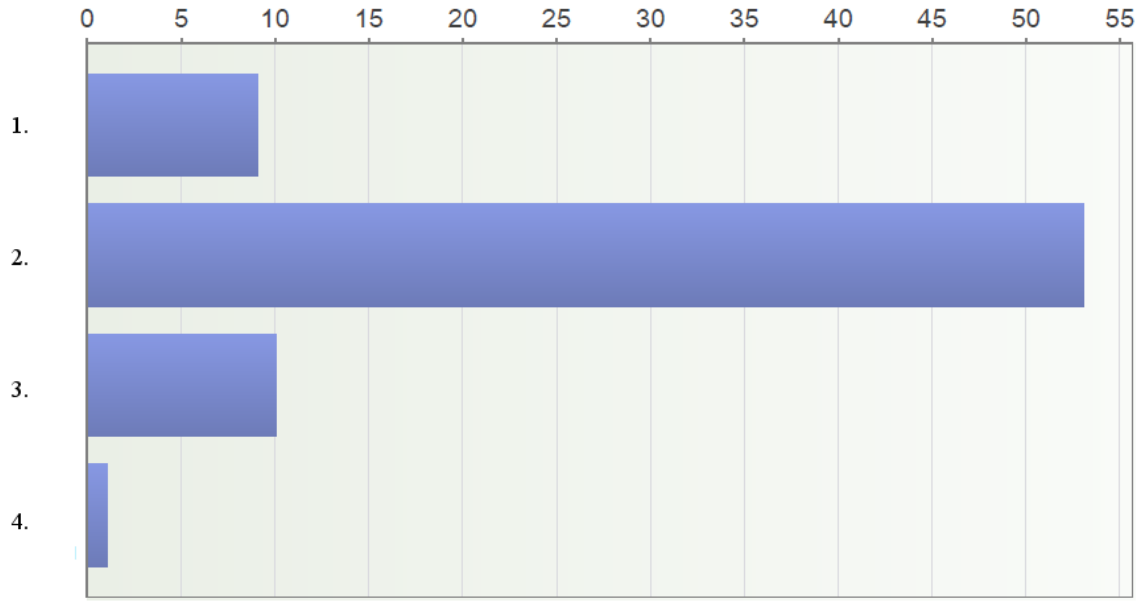

Figure 6 LAURA™ questionnaire, development tool as independent component (Appendix 2, question 14)

3.5 Understanding different customer types

While most customers are highly interested in knowing what kind of development ideas other customers have put forward, not all are like that. This could be rationalized by reflecting the division between active and passive users through traditional Hype Cycle. According to Gartner "The Hype Cycle is a decision aid that will help boards, executive teams, business managers, CIOs, IT leaders and IT professionals discuss and rationalize the choices in front of them. Which things should you be doing? You can't do all of them. Which options are ready for prime time, with low risk, and which have yet to be evolved by market feedback and version improvement? Are there some things you can use to really lead your industry or do you always prefer to be a follower? If you are a follower, how fast must you be to keep pace? A professional group that uses the Hype Cycle to debate these issues will make better decisions." (Gartner 2013). This must be the situation with LAURA™ customer base as well; some are pioneers, some followers. Figure 7 below illustrates Gartner's traditional Hype Cycle.

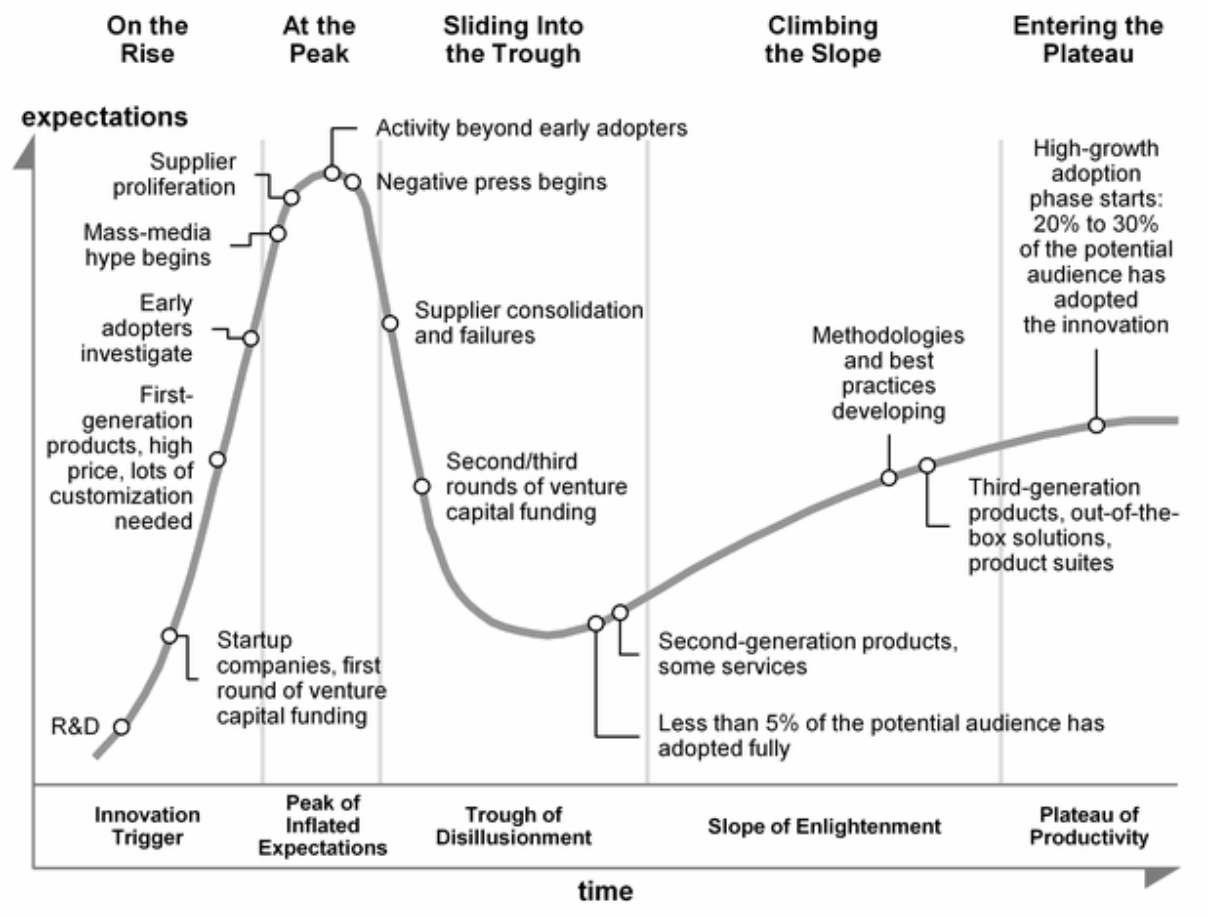

Figure 7 Hype Cycle (Gartner 2013)

Gartner examined ongoing developments in capabilities this year with Application Hype Cycles. General observation was that "For example, supply chain management (SCM) is undergoing a transformation, as markets become more global and demand becomes more fragmented." (Gartner 2013). This indicates and supports the assumption that more development requests and ideas will emerge in near future as customer demands vary a lot from each other.

It is important to stay highly alert with customer wishes at all times as competition gets more intense every day. "SaaS companies should be updated. Traditional software companies normally look at the long term benefits of their products. But with SaaS, this web application can easily add newer features either monthly or quarterly. It can also develop a larger number of platforms, thus making it more iterative. Additionally, Web application developers of SaaS are generally free to explore and focus application capabilities as well as the user experience." (Blokdijk, G. 2008, 83)

One interesting approach is Eric von Hippel's Lead User concept. Hippel (1986) suggests that lead users are the most valuable asset for developing products.

The results of additional research from MIT's Eric von Hippel show us that customers are truly essential when innovating and developing products:

- In a study of 1,193 commercially successful innovations across nine industries, 737 (60%) came from customers
- User-created innovations have been successfully utilized to turn around "innovative slump periods"

Hippel has written multiple white papers (Hippel, E. 2014) on utilizing lead users when innovating and developing products. Hippel's work needs to be investigated more thoroughly, but it goes beyond the scope of this research.

To be successful in continuous improvement, development and update mode is not easy, as the processes are different in different business areas and industries. There are exceptions to this; for example logistics is usually fairly similar in every industry. However, recruitment is a field which is not operated in a same way in every business area or industry. There are several types of employers, which all have different needs in their recruitment process. This reflection of logistics and recruitment is brought forward, because this research is focusing specifically on recruitment software with SaaS delivery model.

3.6 Appropriate pricing models

According to the questionnaire conducted to LAURA™ customers, surprisingly many were ready to participate on the development costs of a new functionality if they could share the development expenses. This fortifies the assumption of possible rising amount of development projects in near future. Figure 8 below states that **49 percent (36 out of 73 answers) of the customers would be ready to participate in devel-**

opment costs if costs could be halved or divided in three ways. Identifying this, it is worthwhile further examining on how development ideas could be presented to customers.

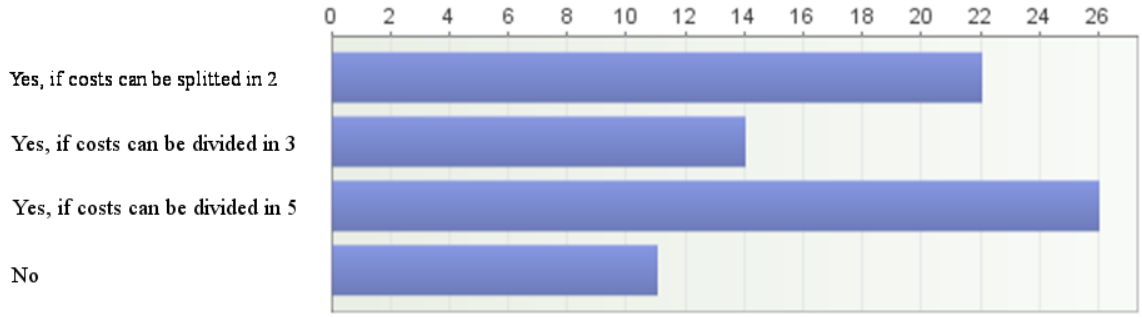

Figure 8 LAURA™ questionnaire, willingness to participate in development costs (Appendix 2, question 17)

There are various types of pricing principles. According to Phaphoom et. al. "In practice, there are two types of licensing models: per-seat subscription and domain subscription plan. However, per-seat subscriptions, which are generally offered by SaaS providers, appear to introduce the pricing overhead as the paid capacity is not in use all the time. The following extract demonstrates the case: I know first hand from my clients how much they hate variable per-seat subscriptions, using credit cards and promo codes to sign up, and paying for accounts that are not being used. (Practictioner10)." (Phaphoom, N., Oza, N., Wang, X., Abrahamsson, P. 2012.).

When it comes to offering new functionalities, Uranus has identified a third pricing model present: one-time charge. It is found out at Uranus that some of the features are more natural to be offered as a one-time-charge. The reason for one-time-charge is that there is no distinct basis or rationale for increasing monthly subscription fee or tie the price on per-seat fee. It is often the case that customer requires a valid explanation if monthly subscription fees are planned to be raised. Having acknowledged this, it seems very important to select the right pricing approach when designing new features and modules for a SaaS system and offering it to customers. Designing new functionalities after all not only serve existing customers, but also attract new potential in terms of software quality and the variety of functionalities. While traditional SaaS pricing

models work well with large volumes and internationally, the one-time charge and fixed monthly fees (that are not attached to user amounts) apply with smaller volumes, such as with the case of Finland and HR sector.

Provide a scalable and cost-effective SaaS Platform. A SaaS growth also needs an impressive but cost effective SaaS platform that provides and accommodates multi-tenant environments. The more features the SaaS application has, the more likely it is to hit the market. And because this web hosting solution has been provided by a number of web developers already; it has relatively become one web application mostly opted by many. (Blokdijk, G. 2008, 74).

Figuring out the right way to offer the feature, functionality or module, and pricing it the right way is mostly marketing, not so much a technical or design dilemma. "SaaS marketing takes a lot of effort in order to succeed. Most SaaS vendors often feel the need for newer developments to reach out to clients, although not so many people appreciate these changes. SaaS marketing is basically all about providing the best web applications at a more meager price range. With so many SaaS vendors at present, there is only one thing SaaS developers should focus on: to attract users and not to sell to customers. After the user base has been developed, the focus then extends to elaborating the product, this time providing additional features that are often useful to clients." (Blokdijk, G. 2008, 83).

With large user base developed, the post-acquisition sales process becomes even more important, as one well-designed feature, once paid by one customer, might generate software updates to dozen other customers as well. And when well-designed, one update might require just a little tweak in other tenant's configuration. "This also sits well with the SaaS company and its software developers. They can cut costs in terms of developing simple customization. SaaS companies an also very easily spot popular and useful customization created by its users which can lead to system upgrades and new patches. This saves SaaS companies of valuable research time." (Blokdijk, G. 2008, 149)

This has proven to be a working development concept, but there have to be clear roles defined in leading the mix of development and sales. This is one discussion to be put onto the table in Uranus in near future.

3.7 Leveraging potential

It is obvious that SaaS model offers a big potential for increasing ROI (return on investment). Gartner Inc., a Stamford Connecticut- based research firm has reported on the 10th of August, 2007 that the worldwide SaaS revenue within enterprise software markets is projected to surpass the US$ 5.1 billion mark in 2007. This is a huge 21 percent increase to the revenue earned in 2006. Gartner Inc. further indicated that SaaS worldwide revenue will even reach as high as US$ 11.5 billion by the year 2011 due to the large number of companies switching to SaaS software applications. (Blokdijk, G. 2008, 96).

To revisit the numbers today, Gartner sums up as follows: "Worldwide software-as-a-service (SaaS) revenue is forecast to reach $14.5 billion in 2012, a 17.9 percent increase from 2011 revenue of $12.3 billion, according to Gartner, Inc. SaaS-based delivery will experience healthy growth through 2015, when worldwide revenue is projected to reach $22.1 billion." (Gartner 2012). As can be seen from the increase in revenue projection, the angle is fairly aggressive, averaging over 15 percent annual growth. Same 15 percent growth has been experienced in Uranus in form of new system deployments.

The growth in post-sales development business has proven to grow more rapidly than system deployments. New system deployments generate more customer needs, and these needs have to be met. With expanding customer base and growing needs, some formal system is needed to manage the flow of the needs. If customer needs can be managed effectively, considerable growth in post-sales development business can be expected.

4 Examining and applying Lean principles

In addition to examining the SaaS characteristics and trends around the model, it was becoming increasingly clear that there was need to understand customer in a contemporary and competitive way. As stated earlier, customer satisfaction is one of the most important, if not the most important part of SaaS business. "Customer satisfaction is always the goal of companies offering products and services to the public. Because of this, business owners always seek for new ideas and concepts, making life a lot more convenient than the usual." (Blokdijk, G. 2008, 97).

To get more out of customer relationship, Lean thinking, Lean principles, and especially Voice of the Customer were studied. "In Lean, the focus of management is to create stable processes and standardized work which consistently deliver value to the customer. For a Lean management system framework to be effective, it must be simple to understand and execute, providing guidance while not getting in the way." (Bell, S.C. & Orzen, M.A. 2011, 9).

4.1 Voice of the Customer

Lean principles are often visualized as a principle pyramid. Voice of the Customer is examined more thoroughly to get more profound understanding on how important the concept is. Figure 9 below illustrates the principles pyramid.

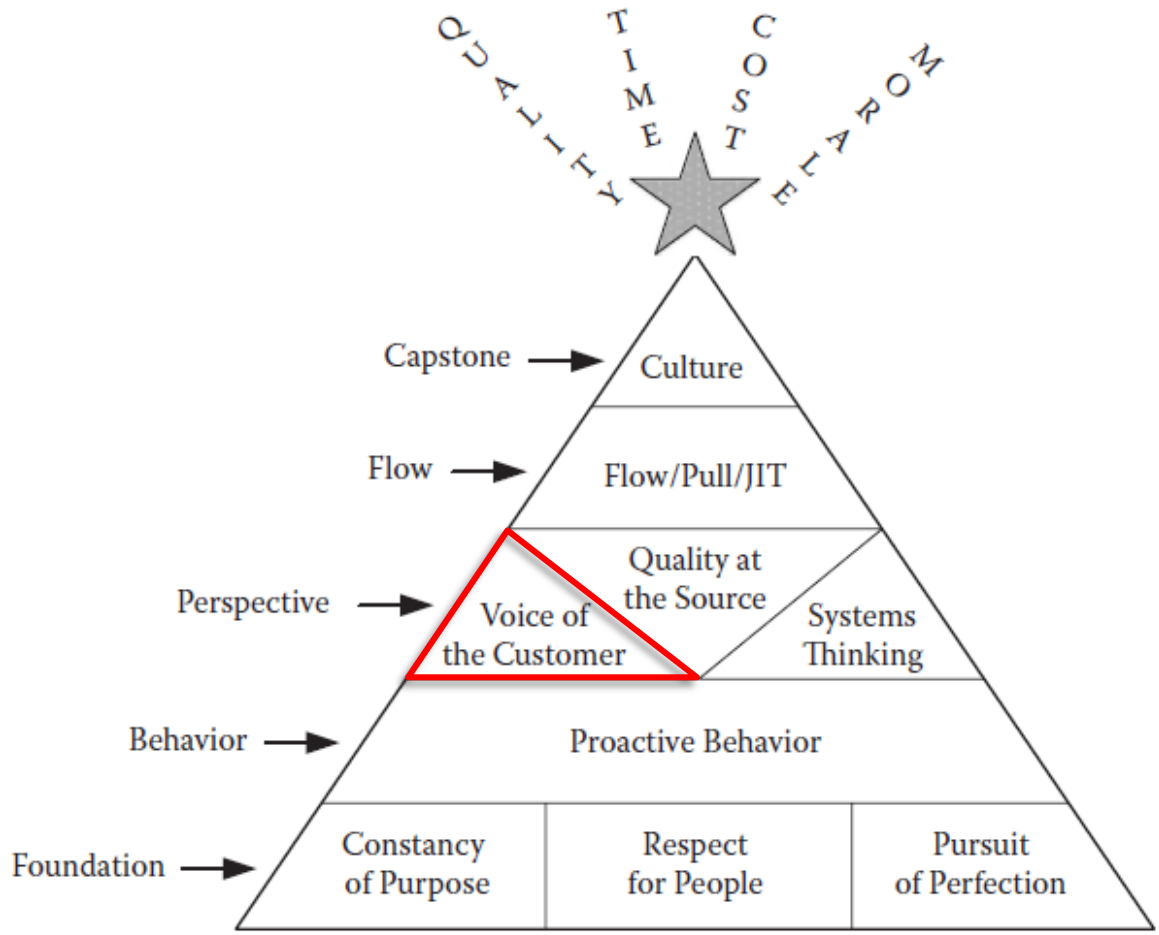

Figure 9 Lean Principles Pyramid (Bell, S.C. & Orzen, M.A. 2011, 18)

According to Bell & Orzen (2011, 25), Lean thinkers always ask "What does the customer value, want, and need?" In order to understand the right approach, customer and software users should be understood first. When it becomes clear what customers see valuable, then the development can focus on the right things.

"It is imperative that organizations develop a clear understanding of what customers care about most. Often they assume they know what customers desire, and as a result deliver products and services that fail to address real customer needs. … To clearly understand the voice of the customer, you must engage with your customers, whoever they are. Use customer segmentation, interviews, focus groups, surveys, sales and service data analysis, and point-of-use observation to develop critical-to-quality requirements. Then return regularly to the customer to ensure improvements and innovations deliver what the customer values most." (Bell, S.C. & Orzen, M.A. 2011, 25).

As mentioned in previous extract, customer segmentation is one method to provide relevant and critical-to-quality results. There has been only minimal customer segmentation in Uranus, and customer segmentation should be studied and if suitable, put into practice.

4.2 From product driven to customer-oriented

According to Kotler (2003, 33-34) "Too many companies are product driven rather than customer centered." Figure 10 illustrates the mindset and priority of a product driven company.

Figure 10, product driven mindset, adopted from Kotler (2003, 33)

Kotler (2003, 33) points out that product driven companies offer their functionalities to all customer segments, neglecting difference between customers and their values. This can be harmful as customers do not usually wish unnecessary offers; they might actually erode whole communication between vendor and customer. This way, knowing your customer is vital. Only by identifying varying customer types can vendor be able to offer relevant functionalities to right customers.

"Not knowing much about individual customers, they cannot efficiently cross-sell or up-sell. Both processes require capturing transaction and other information on individual customers and inferring what else they might be interested in. A customer-oriented company visualizes a different approach, called sense-and-respond marketing." (Kotler, P. 2003, 34) Figure 11 visualizes the customer-oriented mindset.

Figure 11, customer-oriented mindset, adopted from Kotler (2003, 33)

Kotler (2003, 33-34) reminds that company must understand their customer in order to better develop appropriate channels, offerings, inputs, and assets. These offerings can be assimilated to new functionalities that are offered to LAURA™ customers.

As to who should interact with the customer mostly, LAURA™ users were inquired about the desired party. Each customer will at some point have conversations with following dedicated individuals at Uranus Oy: business representative, technical person in charge, product director, and customer service. **50 percent (37 out of 73) of the respondents preferred technical person in charge as a primary contact person.** Customer service got 24 percent of the votes, business representative 16 percent, and product director slightly less than 14 percent as a primary point of contact (POC). Preferred POC was selected from one to four. Chart 1 below clarifies the division between preferences.

Role	**1**	**2**	**3**	**4**	**Total**	**Average**
business representative	12	19	24	18	73	2,66
technical person in charge	37	15	7	14	73	1,97
product director	10	25	17	16	73	2,42
customer service	18	22	17	16	73	2,42
Total:	77	81	71	63	292	2,41

Chart 1 LAURA™ questionnaire, primary contact person in software development affairs (Appendix 2, question 12)

4.3 Listening Voice of the Customer

Both Lean principles and marketing insights by Kotler suggest that customer should be studied and listened in order for company to be able to offer right functionalities to each customer. LAURA™ users were asked on how they would like to be contacted in order for the development of their recruitment software and process to be effective. The questionnaire results pointed out clear results; as a contact method, email was valued the most appropriate way to contact customers. As much as **85 percent out of all respondents answered that email is extremely appropriate or appropriate way to contact customer.** Figure 12 shows how the answers were divided.

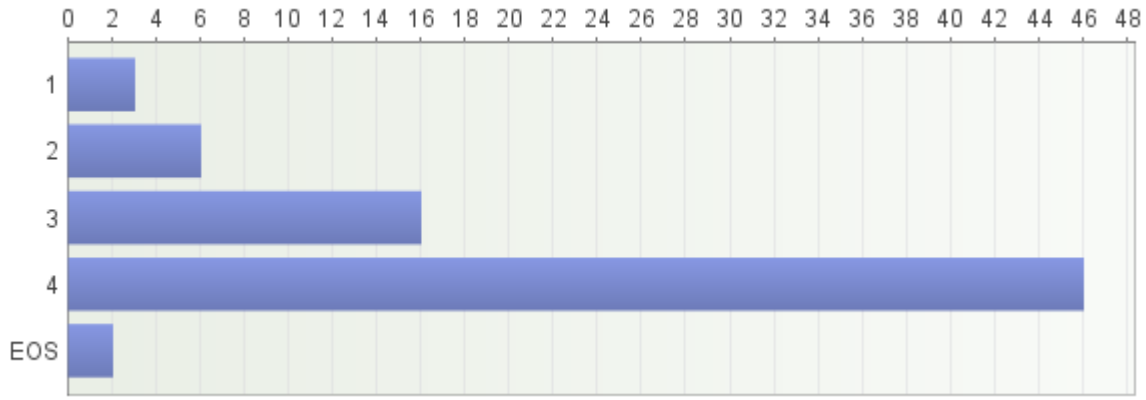

Figure 12 LAURA™ questionnaire, email as a contact method (Appendix 2, question 10)

Another well-considered way of discussing about new functionalities ended up being face-to-face meeting. Slightly less than email, **65 percent of the customers preferred face-to-face meetings as extremely appropriate or appropriate way to contact customer.** Figure 13 below illustrates how answers were deviate.

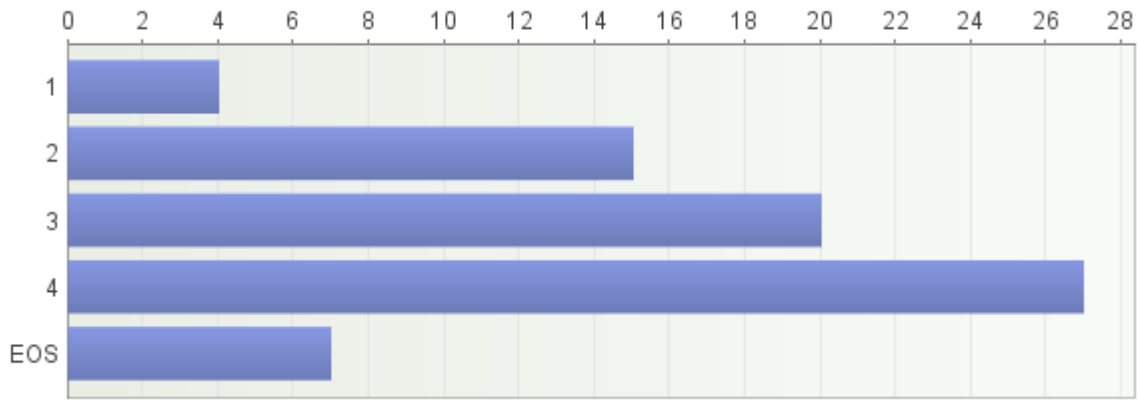

Figure 13 LAURA™ questionnaire, face-to-face meeting as a contact method (Appendix 2, question 11)

Phone call on the other hand was valued the least appropriate method. As few as **38 percent out of the respondents considered phone call being extremely appropriate or appropriate way of contacting the customer.** It can be seen from Figure 14 that only 13 (18 percent) respondents considered phone call as extremely appropriate way.

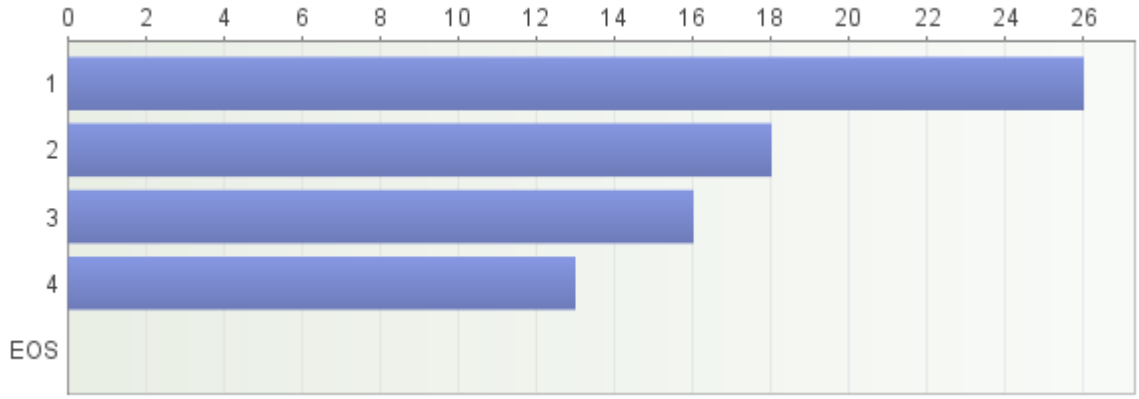

Figure 14 LAURA™ questionnaire, phone call as a contact method (Appendix 2, question 9)

Customers were also asked about how often they would feel appropriate to be contacted in the name of new functionalities and general development. **The most voted frequency for contacting customer was six months with 35 percent of the answers**. Next popular of the options was every third month (20 percent). Lesser attention got

every other month (16 percent), once a year (15 percent) and every month (10 percent). Division between answers is illustrated in Figure 15.

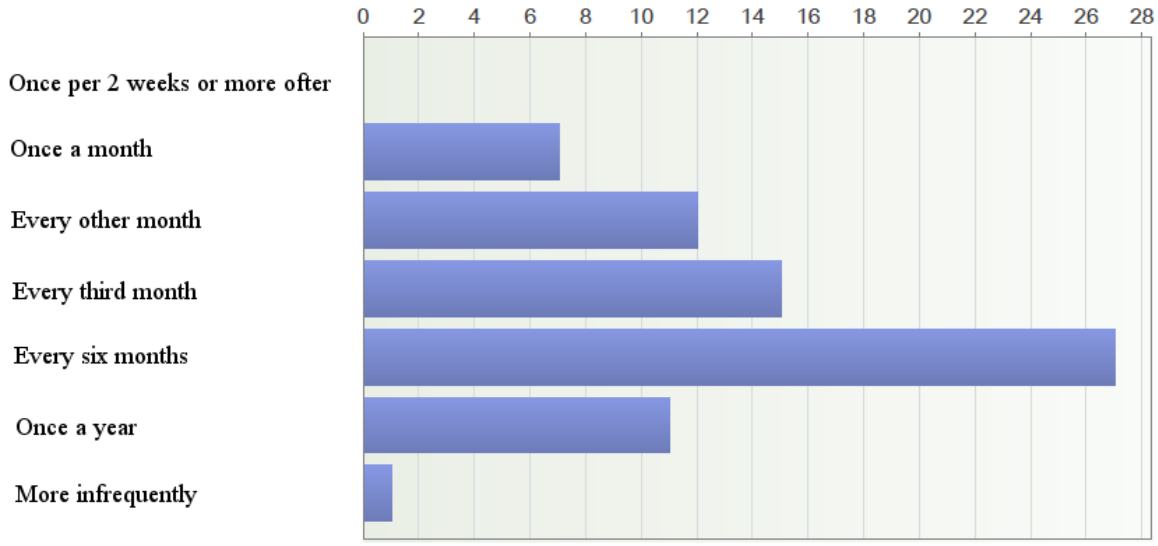

Figure 15 LAURA™ questionnaire, appropriate contact frequency (Appendix 1)

"Consistently listening to the voice of the customer ensures you are focusing on the right issues and making improvements that will be valued by your current and future customers. Understanding customer needs and desires more clearly than your competition will enable you to be more responsive and agile, creating competitive advantage and market leadership." (Bell, S.C. & Orzen, M.A. 2011, 25)

"Trend in software development is extremely difficult to project. There are times wherein a certain software application dominates the market and before you know it, after a while a new and improved version of it will be developed. The only difference here is that this time, a separate vendor will be responsible in releasing the new software." (Blokdijk, G. 2008, 111). Interpreting Blokdijk's writing, customers might flee to other vendor if they feel their wishes are not listened and acted upon. This further enforces the assumption that customers truly need to be listened and systems be developed based on their input.

When analyzing the ways and the preferred frequency of contact, it is eminent that maintaining constant connection with all customers is extremely important. Adding to

the questionnaire results, as it is one of Lean foundation principles to listen to the voice-of-customer, high attention needs to be given to contacting the customer frequently.

4.4 VOC exercise

In addition to listening to the voice of customer, we need to understand who our customers are. Bell and Orzen (2011, 58) introduce different exercises to identify and understand who customers are and what they want. An example of a VOC exercise is illustrated below in Figure 16.

Value Stream: Sales to Cash

Who is the Customer?	Internal or External?	How well do we understand them?	What information do they value?
Finance department	Internal	High	Accurate data, available to support timely financial close
Product development team	Internal	Low	Not sure, something to do with accurate sales history; action item: schedule department stakeholder interviews
Top ten customers by sales $	External	Medium	Accurate invoicing, prompt response to questions, what else would differentiate us? Action item: interview sales and marketing, consider focus group

Figure 16 Simple voice-of-customer exercise (Bell, S.C. & Orzen, M.A. 2011, 58)

It is one of the carrying themes of Lean to add value to the customer. This is why customer should be involved in the improvement activity (voice of customer). Figure 16 illustrates one VOC brainstorming exercise which puts focus on information value. The exercise is designed so, that each participating team identifies what customer values. After this the team is able to evaluate the severity of the waste it discovers. For this, value stream impact evaluation is performed. When impact evaluation is done, waste elimination can be prioritized. (Bell, S.C. & Orzen, M.A. 2011, 58)

4.5 Knowledge management

As development requests and communication with customer in general is conducted in different forms (phone calls, emails, meetings), there might not be coherent way to document and process relevant and further valuable interaction. Some of the actions initialized via those interactions might be valuable to other involving parties as well. Bell & Orzen (2011, 82) point out that "The majority of knowledge is stored typically inside the minds of workers and not explicitly documented, causing everyone to perform the same work differently. Inconsistent behavior, by definition, cannot be consistently improved, since there is no established stable baseline from which to start. When process and practice knowledge belongs only to certain people, outcomes remain inconsistent, and knowledge is lost when they leave. But once tribal knowledge becomes stabilized, standardized, documented, and shared with others, processes can be continuously improved and meaningfully measured. As organizations purposely identify core processes, assess their effectiveness, and document procedures, they make knowledge management a natural part of work. As best practices are documented, they secure the value of the organization's intangible, intellectual assets. These are process assets that consistently add value to the customer and create a foundation for continuous improvement and innovation, providing distinction, competitive differentiation, and advantage to the organization. (Bell, S.C. & Orzen, M.A. 2011, 82).

Based on Bell & Orzen's finding, the suggested and preferred development tool seems to become even more valuable module to be implemented and specifying the module should be started as soon as possible.

"A new idea can come from anyone, anywhere, anytime. Thus innovating processes benefit from innovative information systems which facilitate open communication and knowledge sharing, enabling continuous and rapid learning. Let's be clear—information and information systems do not drive innovation; they support and enable it. There is only one thing that ultimately drives value through innovation: the voice of the customer. So we must learn to listen carefully, engaging all our senses, which can

be extended and amplified through our digital nervous system." (Bell, S.C. & Orzen, M.A. 2011, 93)

4.6 Flow / Pull / Just In Time

Further studying Lean methodologies fortifies the assumption that the development model chosen for LAURA™ software. While it is in the core of SaaS delivery model, customer must be listened (Voice of the Customer). Right mix of SaaS delivery model and Lean principles makes it possible for software development to achieve the Mass Customization state, or the "Sweet Spot" of Agility as stated in Figure 17 below.

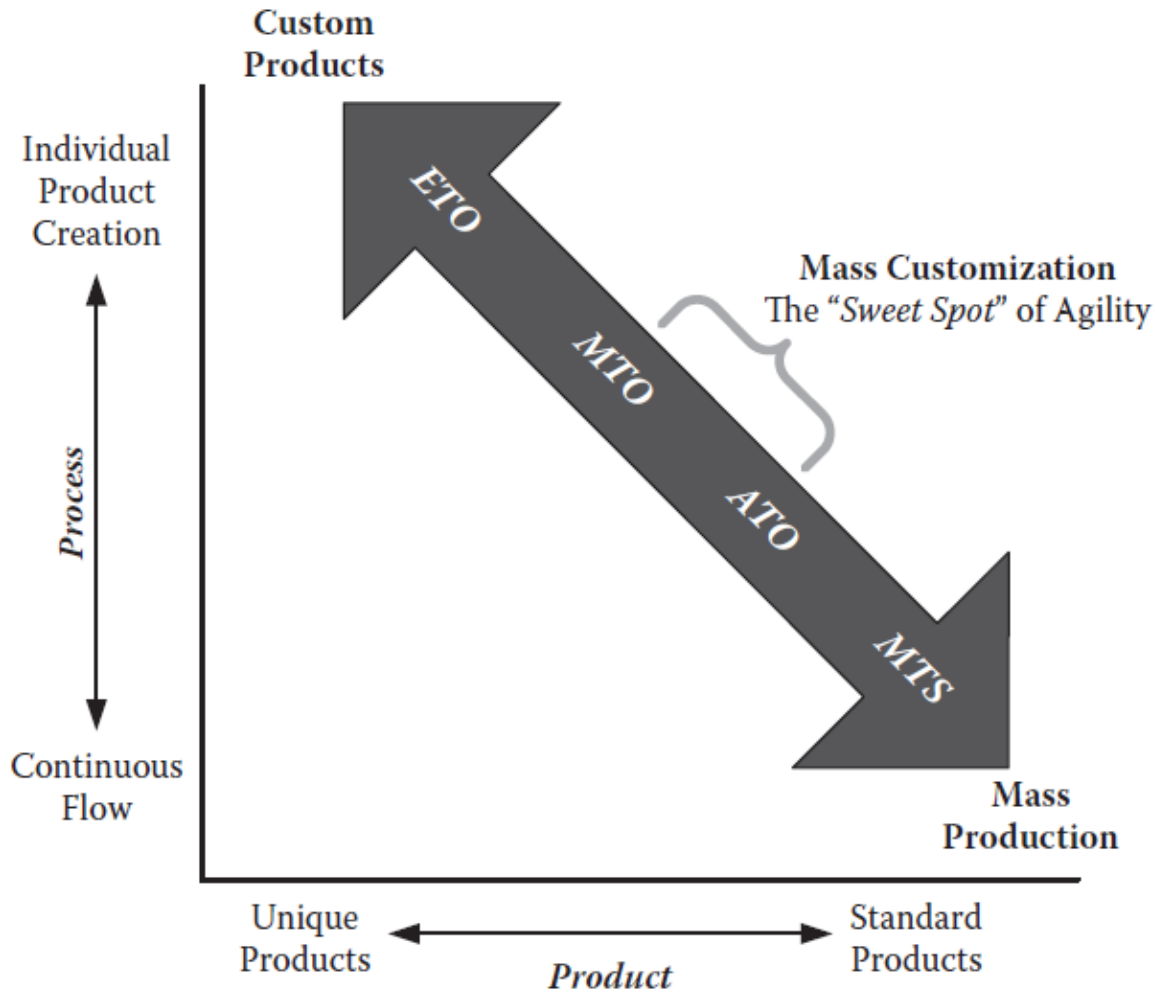

Figure 17 The product-process diagonal (Bell, S.C. & Orzen, M.A. 2011, 102)

"Over the years, manufacturers have developed a variety of tactics to provide customers with flexible, configurable products built upon standard, modular options that can be delivered quickly to customers' specific requirements. This approach, called mass customization, is covered by the central region of the diagonal. While some speed and flexibility are sacrificed, and marginal cost is added, the result is agility: the ability to quickly respond to changing market conditions and customer demand, based on a standard set of configurable products and processes, with minimal inventory in the pipeline. The full expression of this approach is called mixed model production, where each unit flowing on a production line may carry different specifications." (Bell, S.C. & Orzen, M.A. 2011, 103).

This is one of the carrying principles of LAURA™ development, designing, implementing and delivering functionalities to customers as soon as they are needed (Just in Time). Development is also designed so, that already implemented functionalities can be enabled in customer systems with minimal effort. Flow is kept by pushing out updates that improve usability of the software or otherwise help users in their daily activities. These methods follow Lean principles.

4.7 ITSM touch

While reducing wasteful actions and inspiring on doing the right things at right times, Lean also respects more traditional IT guidelines. ITSM and especially ITIL introduces a way to communicate services provided to customers in a well-defined way; business service catalogue.

"Bell & Orzen see ITIL and service catalogue as a structured, common language for IT services to communicate between business and IT. "This enables the business and IT communities to agree upon services provided by the IT organization, setting clear expectations for their performance and establishing meaningful measurements against those expectations. One of the essential components of this common language is a service catalog, describing the value-added services the IT organization provides to its customers." (Bell, S.C. & Orzen, M.A. 2011, 157).

When having a service catalogue, standard services are coherently and similarly documented in a preferably centralized location. Service catalogues should include service descriptions, instructions on how to offer them, and what they might cost. Service catalogues should also include SLAs when applicable. SLA defines service performance, and sets the bar for customer satisfaction.

"An effective communication, measurement, and feedback framework encourages adaptation and innovation, where customers can describe, in meaningful terms, new services they desire and are willing to pay for. This framework should also allow for the request of nonstandard services as required, such as research and development activities. Service catalog offerings form the basis for IT resource planning, staffing, skills development, and management, aligning service capacity with customer demand." (Bell, S.C. & Orzen, M.A. 2011, 157).

According to ITIL and refined by Lean, it seems to be a worthwhile idea to document existing functionalities in consistent and understandable way, by service catalogues. Service catalogue is part of service catalogue management, which is one area to dig into deeper. According to PMG (2014) service catalogues should exist in two levels though, business and technical. Customers should only see the business service catalogue, where customer can learn what products and services are there to offer, at which price, and what is the process to order them.

4.8 Customer & development team cooperation

The voice of the customer is an essential element in Lean software development, as the customers' definition of value guides all activity. In this case, customer requirements guide the actions of the software development team. The term customer requirements might be interpreted to suggest that the customer controls software design decisions, and that there is a separation between the problem, the design of the software, and its implementation. Consider instead the term design choices, which suggests that the customer and software designers collaborate to understand the problem and develop

countermeasures, which may or may not involve software changes—this is problem solving versus solutions thinking. (Bell, S.C. & Orzen, M.A. 2011, 178)

Bell & Orzen cite customer-oriented development as collaboration between customer and development team. This has been a carrying thought in LAURA™ development as well since its development started around eleven years ago. It is however found out in Uranus that it might not be the best way that customer dictates how implement a certain solution, but to point out pain points or the need. It is then the responsibility of the collaborative development team to offer a feasible solution to solve the issue at hand. Bell & Orzen continue with the same theme:

"The old adage 'The customer is always right' doesn't necessarily apply to Lean software development, at least not early in the life cycle. This is the essential reason for the discipline of A3 thinking, since the immediately apparent "solution" often addresses symptoms, but not the root causes. The team should therefore respectfully assume that customers may not initially know what they need." (Bell, S.C. & Orzen, M.A. 2011, 178)

It is important to understand that customer doesn't always see all the aspects around the issue or problem. Bell & Orzen propose that customer doesn't necessarily see the entire process. This dilemma can be opened up by asking what the problem is, not what he or she wants. Another problem can be the legacy thinking from previous system. Some people see some way of working as suitable, and will not change their direction voluntarily. This aspect also touches the theme of change resistance, which will not be discussed in this work and it would need an own section for it.

Also, not everybody think the same way, as Bell and Orzen (2011, 178) point out; "Different customers think differently; for example, a manager and an operator may request something entirely different from the same application. Similarly, expert users may require different capabilities from mainstream and novice users; it is often the expert users and managers who are the most outspoken about the system requirements,

and mainstream users are left to struggle with unnecessary complexity in their daily work. The team facilitator should ensure balanced input while gathering requirements."

One last mention from the Lean perspective is the "go to gemba" theme. Gemba is Japanese and indicates customer's site. "The most important knowledge is often tacit: customers don't realize what they know. The team must go to gemba, carefully detecting the customers' intent and needs, but not necessarily their initial words. It is often only through conversation, observation, and experimentation that customers realize what problems must be solved; this is how breakthrough improvement and innovation often emerge." (Bell, S.C. & Orzen, M.A. 2011, 178-179).

It is natural when communicating with people that the other one jumps into conclusions. Same phenomenon sometimes applies when customer points a problem to their technical contact person in Uranus. This has to be identified by every member in the development team and first try to understand what the customer really means and tries to solve, and only after then start to think of different solutions. Perhaps it would be worthwhile to suggest that one of Uranus' technical specialists could periodically visit different customer sites, gembas.

5 Conclusion and suggestions

The research remarkably reinforced case company's presumption that customer should be listened in order for the SaaS development to remain competitive and high customer satisfaction can be kept. Lean introduces principles towards voice-of-customer and tools for engaging with development, involving the customer. Accompanied with general SaaS guidelines, research gave good direction on how development ought to be formalized and customer should be taken into account and communicated with.

5.1 Conclusion

The questionnaire results (73 HR-professionals) gave valuable information on what kind of vendor approach customers see most fit when it comes to introducing an im-

plemented functionality to customers. Customers were asked about preferred contacting method and contact frequency. Majority of the customers considered too frequent contact frequency as unconventional. Most preferred contact frequency was six months. According to questionnaire answers, customers would like to be contacted considering new functionality offers most preferably by email. Meeting was valued nearly as much. Phone call as a contact method was valued the least, so this gives a clear signal to Uranus sales and marketing team on re-thinking current contact methods to appreciate customer's preferences. In addition, LAURA™ customers prefer interaction primarily with their dedicated technical contact person, half of the respondents stated that they prefer technical contact person as their primary point of contact. In general level, customers are extremely or very satisfied to the service they have gotten from Uranus.

Also, even though customer oriented approach is the carrying principle in Uranus, customer satisfaction is not measured periodically at the moment. This should be reassessed and changed as it is more important to look into future rather than to the past (Kotler, P. 2003, 41). Instant and continuous customer satisfaction could be achieved via feedback mechanism, which Blokdijk (2008, 173) lists as one of the four key characteristics of SaaS product. For this, different feedback mechanisms should be examined. Some of these have been provisionally familiarized with, and this work should definitely be continued and suitable 3rd party feedback / communication component should be taken into use. In addition to technical solutions, traditional customer satisfaction surveys should be carried out continuously to be able to keep track on the customer satisfaction rate.

As agile thinking and benefits of SaaS already expedite LAURA™ software development, more attention should be directed to marketing and pricing techniques instead. While traditional SaaS pricing models may work well with large volumes and internationally, the one-time charge and fixed monthly fees (that are not attached to user amounts) seem to apply with smaller volumes, such as with the case of Finland and HR sector, and especially within LAURA™ customer base. There is always a balance challenge between maximizing sales and developing a competitive product with quality

functionalities, and pricing is the key factor in this. Price should not always put first, but the potential behind the new functionality should be seen prematurely. Predicting individual functionality success or popularity is a challenge which Uranus must try to learn through active communication with customers via face-to-face meetings and different types of customer inquiries.

Also, according to Bell & Orzen (2011, 25) customer segmentation is one method to provide relevant and critical-to-quality results. There has been only minor customer segmentation in Uranus, and customer segmentation for marketing purposes should be studied, and if suitable put into practice. Via successful customer segmentation right information is delivered to right audience and excessive marketing bloat can be avoided.

Second part of the questionnaire inquired interest towards a separate tool for development requests. Answers strongly indicated that such a tool should be present in the system; 82 percent of all the respondents considered separate tool being useful. Majority did also think that a formalized tool would serve as a proper media for making a request with formal specification; however, some more communication might be needed in order to get the desired end result. Customers also would appreciate if they could see development requests made by other customers as well. It would be preferable to also have a "Like" functionality for development requests. This way most liked development requests or wishes could be implemented with greater priority. In addition to that, most would agree on sharing the development costs if there were unified needs shared with some other customer. This answers the research problem on finding recurring patterns in customer needs or requests.

It is eminent that customers are the number one development idea asset when it comes to relevancy of functionalities. Customers ask for what they want or need, and it is the responsibility of the vendor to deliver to customer the fulfilment for the need. How well (Quality at the Source) and fast (Just in Time) it is delivered, that is what distinguishes providers from each other.

Questionnaire answers reinforced the assumption that a separate development initiative tool would be required. SaaS literature supported this assumption, treating a feedback mechanism as one of the key characteristics of SaaS product. Development initiative tool seems to become remarkably valuable module to be implemented, and it is eminent that specifying the module should be started as soon as possible.

Studying SaaS literature and analysing current practices in Uranus also raised the question of role division on how the development should be led. The more development initiatives are introduced, the harder the management of the development grows. While there is a definite need for a long-term strategy leading the way where systems and its functionalities should be developed, agile thinking needs to be kept in mind. Lean principles; voice-of-customer, flow/pull/JIT and sweet spot should guide to make right calls and navigate Uranus as a partner towards even more customer-oriented development direction. This is one discussion to be put onto the table in Uranus in near future.

To deliver what customer wants in efficient ways is the key to success.

5.2 Suggestions for further actions

Since voice-of-customer is maybe the most important principle of Lean and also successful SaaS development, further investigation should be done around these subjects. Some literature on Lean and how to apply agile thinking in software development has already been gathered for future research. It is however so that LAURA™ success is mostly because of the good customer service, understanding the customer and delivering what is asked for, and this differs from traditional SaaS, where no tailoring is usually made.

Different feedback methods should be investigated for voice-of-customer to be heard. Method can include inbuilt chat-like feedback tool in the system; there are various ready products in the market which should be gotten familiar with. Feedback could be gathered using LinkedIn groups for communication with the customer, and generating

customer-to-customer communication by arranging use panels, either virtually or in face-to-face meetings. The designing and implementation of the development tool that was extremely much appreciated idea based on the questionnaire should be started immediately. Ideas and free form specifications were already collected in the questionnaire, which can be used when detailed specification is created.

Customer satisfaction should be measured continuously. This assumption was reinforced by Kotler (2003, 41), where customer satisfaction is argued to be more important metric than market share, as market share is looking into history, and customer satisfaction measures current situation and indications for future.

Hippel has written multiple white papers (Hippel, E. 2014) on utilizing lead users when innovating and developing products. Hippel's work needs to be investigated more thoroughly.

It is also important to follow how SaaS market evolves and be alert all the time, even if LAURA™ as software product doesn't follow all SaaS characteristics. It might be a good idea to further examine the variation between LAURA™ and traditional SaaS products and try to find competitive advantage via that. SaaS marketing was touched multiple times during the research, and SaaS marketing should be researched in detail.

5.3 Personal evaluation

Investigating literature based on agile development and familiarizing the SaaS best practices have given good insight and widened consciousness when thinking of product development and customer management in general.

Valuable information has been internalized and we now have fairly good understanding on how LAURA™ software development should be continued. It has been highly useful personal learning experience towards professional development approach. Also, having an external push on the development tool gives more motivation to actually implement the tool with good and profound plan.

The questionnaire gave insight about the customer views on how they see us as a vendor or partner, so roles within Uranus will need to be re-evaluated and it might affect author's personal responsibilities as well. It is clear that customers need to be listened (Voice of Customer) and there is a clear learning effort to better listen and understand customers on personal level as well.

This work has been the most extensive academic work I have carried through by far. Having dwelled into tens of writings has given pointers and direction on what literature to look into next. It has been truly an educating and self-developing project. I am also extremely pleased to see the concrete results of this work, which we will now start to be implemented at Uranus.

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Appendices

Appendix 1 – Interview questions

LAURA-kehitys ja sen kommunikointi asiakkaan näkökulmasta, haastattelu
(LAURA development and it's communication from customer perspective)

Saate

Olen valmistelemassa pohjamateriaalia tulevaa opinnäytetyötä varten. Opiskelen siis tässä työn ohella Haaga-Heliassa ylemmässä AMK:ssa (Master's Degree in Information Systems Management) tietohallintojohtamista. Opinnäytetyön aihe tulee käsittelemään LAURA:n kehitystyön kehittämistä, nimenomaan asiakasta kuunnellen. Otsikko hakee vielä muotoaan, mutta tulee luultavasti olemaan jotain tähän suuntaan "How to maximize SaaS –enabled development to serve all customers, case LAURA™ recruitment software". Sitä varten haluaisin haastatella sinua LAURA:n kehitykseen liittyen. Olen valinnut muutamat aktiivisimmat pääkäyttäjäkontaktini eri toimialoilta ja sen vuoksi lähestyn myös sinua :).

Olisiko sinulla (tai pääkäyttäjäkollegallasi) puolesta tunnista tuntiin aikaa jossain välissä vielä kesäkuussa istua alas ja keskustella auki allaolevat kysymykset haastattelun muodossa? Kysymyksiin ei tarvitse miettiä etukäteen vastauksia, ja muutenkin keskustelun toivoisin olevan melko vapaata, myös kriittinen saa olla :). Mikäli tapaaminen kasvotusten ei sovi aikatauluun, myös videopalaveri on mahdollinen.

Haastattelun tavoitteena on kerätä asiakkaiden näkemyksiä LAURA-kehityksen ja sen kommunikoinnin nykytilasta sekä toiveita sen kehittämisestä.

OSA I

1. Miten teette nykyisin kehityspyyntöjä LAURA:an liittyen?
2. Miten saatte nykyisin tietoa LAURA:n uusista ominaisuuksista?
3. Miten esitätte nykyisin kehitystoiveita joiden toivoisit olevan yleistä järjestelmäkehi-

tystä?

OSA II

4. Miten toivoisit kehityspyyntökonseptia kehitettävän?
5. Miten toivoisit tiedonsaantia kehitettävän?
6. Miten toivoisit kehitystoivekonseptia kehitettävän?
7. Muita asioita LAURA:n kehitykseen liittyen?

Appendix 2 – Questionnaire form

LAURA™ - järjestelmäkehityskysely

Tervetuloa vastaamaan LAURA™ -rekrytointijärjestelmän pääkäyttäjänä kyselyymme! Kysely on osa laajempaa tutkimusta, jonka tavoite on tutkia Uranuksen järjestelmäkehityksen asiakaslähtöisyyttä, jatkokehityksen tehokkuutta ja kartoittaa parhaita tapoja kehittää järjestelmää asiakaslähtöisesti ja asiakastarpeisiin vastaten.

Osa I - Yleistä

Kyselyn 1-4 valintakysymysten vaihtoehdot on aseteltu "huonoimmasta" "parhaimpaan", eli:
1. huonoin / vähiten / negatiisivin
4. paras / eniten / positiivisin EOS: en osaa sanoa

1. Kuinka hyvin mielestäsi muutostarpeisiinne on vastattu? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

2. Kuinka hyvin mielestäsi saatte tietoa LAURA™:n uusista ominaisuuksista? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

3. Kuinka tyytyväinen olet kokonaisuudessaan saamaasi asiantuntijapalveluun järjestelmään liittyen? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

Osa II - Viestintä

4. Mitkä seuraavista tiedotuskanavista sinulle ovat tuttuja LAURA™:n toiminnallisuuksiin liittyvissä asioissa? *

☐ Kuukauden ominaisuus (uutiskirje)

☐ Tuoteuutiset (järjestelmässä)

☐ LAURA-päivä

5. Kuinka hyödyllisenä näet Tuoteuutiset? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

6. Kuinka hyödyllisenä näet Kuukauden ominaisuus -uutiskirjeen? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

7. Kuinka hyödyllisenä näet LAURA™ -päivän? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

8. Kuinka usein Uranuksen olisi mielestäsi tarkoituksenmukaista olla yhteydessä teihin järjestelmäkehityksen ja uusien ominaisuuksien osalta? *

○ Kerran kahdessa viikossa tai useammin

○ Kuukausittain

○ Joka toinen kuukausi

○ Joka kolmas kuukausi

○ Kerran puolessa vuodessa

○ Kerran vuodessa

○ Harvemmin kuin kerran vuodessa

9. PUHELINSOITTO - Kuinka tarkoituksenmukainen tapa olla yhteydessä järjestelmäkehityksen ja uusien ominaisuuksien osalta on puhelinsoitto? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

10. SÄHKÖPOSTI- Kuinka tarkoituksenmukainen tapa olla yhteydessä järjestelmäkehityksen ja uusien ominaisuuksien osalta on sähköposti? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

11. TAPAAMINEN- Kuinka tarkoituksenmukainen tapa olla yhteydessä järjestelmäkehityksen ja uusien ominaisuuksien osalta on tapaaminen? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

12. YHTEYSHENKILÖ - Järjestelmäkehitysasioissa voitte olla yhteydessä eri tahoihin Uranuksessa, kaupalliseen yhteyshenkilöön, tekniseen vastuuhenkilöön, asiakkuusjohtajaan sekä asiakaspalveluun.

Arvioi mieleisesi yhteydenottojärjestys, **HUOM: 1 ollen ensisijainen.** *

	1	2	3	4
Kaupallinen yhteyshenkilö	○	○	○	○
Tekninen vastuuhenkilö	○	○	○	○
Asiakkuusjohtaja	○	○	○	○
Asiakaspalvelu	○	○	○	○

Osa III - Kehitystoivetyökalu

Tässä osiossa kartoitetaan mielenkiintoa erilliselle työkalulle, jonka kautta voitaisiin lähettää kehitysehdotuksia, muutospyyntöjä ja palautetta. Lisäksi työkalun kautta voisi tutkia soveltuvia muiden anonyyminä pysyvien asiakkaiden osoittamia tarpeita ja mahdollisesti osoittaa kiinnostusta näitä tarpeita / toiveita kohtaan.

13. Kuinka hyödyllisenä näkisit erillisen työkalun LAURA™:ssa, jonka kautta kehi-

tystoiveita ja muutostarpeita voisi tehdä, ja jonne yhteydenotot tallentuisivat? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

14. Uskotko, että erillisellä kehitystoivetyökalulla voisi selkeästi määritellä kehitystoiveen tai muutostarpeen niin, että lopputulos on toivottu? *

○ Kyllä, kirjallisesti määritelty kehitystoive tai muutostarve on selkeä
○ Kyllä, mutta se voi vaatia vielä keskustelua teknisen vastuuhenkilön kanssa
○ En aivan usko, että toiveita tai tarpeita saa kuvattua kattavasti kirjallisesti
○ Ei, kirjallinen kehitystoive tai muutostarve mitä luultavimmin toteutettaisiin toisin kuin toivottu

15. Jos ehdottaisit kehitystoiveen tai tilaisit räätälöintiä järjestelmään, mitkä olisivat mielestäsi oleellisia työkalussa täytettäviä tietoja?

_____

_____

_____

16. Kuinka hyödyllisenä toiminnallisuutena kokisit mahdollisuuden nähdä muiden tekemiä kehitystoiveita ja muutostarpeita? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

17. Jos löytäisit kehitystoivetyökalun kautta teille soveltuvan toiminnallisuuden, olisitko valmis osallistumaan kehityskuluihin yhdessä muiden asiakkaiden kanssa? *

○ Kyllä, jos kulut on mahdollista puolittaa
○ Kyllä, jos maksajia vähintään 3
○ Kyllä, jos maksajia vähintään 5
○ En

18. Kuinka järkevää mielestäsi olisi mahdollisuus antaa kannatusta toisten tekemille muutostoiveille, esim. "tykkää" tai "kannata" -napilla? *

○ 1 ○ 2 ○ 3 ○ 4 ○ EOS

19. Kehitystoivetyökalu on vasta ideavaiheessa. Voit tässä visioida työkalun toimintaa, otamme mieluusti vastaan kaikki ideat mahdollisimman järkevän ja asiakkaille hyödyllisen työkalun kehittämisen pohjaksi.

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_____

Yhteystiedot ja arvonta

20. Erittäin paljon kiitoksia vastauksistasi! Vastanneiden kesken arvotaan 1000 euron arvoinen ominaisuuspaketti asiakkaan LAURA™ -rekrytointijärjestelmään. Ilmoita sähköpostiosoitteesi mikäli haluat osallistua arvontaan, tai jos haluat kyselyn tulokset sähköpostiisi niiden valmistuttua.

Sähköposti

_____

21. Voit antaa tässä palautetta Uranukselle. Voit myös halutessasi aloittaa keskustelun järjestelmänne kehitykseen liittyen. Kirjaa ajatuksesi tähän ja ilmoita sähköpostiosoitteesi yllä, niin olemme sinuun yhteydessä pikimmiten!

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